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TRANSMITTAL FORM

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Application Number	10/608,614
Filing Date	June 30, 2003
First Named Inventor	MUCHALOV
Art Unit	3651
Examiner Name	BIDWELL
Attorney Docket Number	5346-14

Total Number of Pages in This Submission

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☑ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☑ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
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- ☐ After Allowance communication to Technology Center (TC)
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- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
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Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

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Date	July 15, 2004

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IN THE UNITED STATES PATENT OFFICE

Application of:	MUCHALOV, I.	Docket No.:	5346-14
Serial Number:	10/608,614		
Filed:	June 30, 2003		
Title:	**Conveyor Transfer Assembly**		
Examiner:	Bidwell, J. R.	Group Art Unit:	3651

The Commissioner of Patents
The United States Patent Office
Crystal Plaza Two, 2011 Jefferson Davis Highway
Arlington, Virginia 22202 USA

BY COURIER

July 14, 2004

Sir:

RESPONSE TO OFFICE ACTION

This is in response to the Office Action dated May 17, 2004.

In response to the Action, the Applicant has made the following amendments to the disclosure of the invention, and to the drawings, as set out hereinbelow. The Applicant has also provided comments on these amendments.

Amendments

The Office is requested to record the following amendments:

Disclosure

In the Disclosure, please make the following amendments:

Amend Page 5, paragraph 25, as follows:

Figure 14 shows a side view schematic of a telescoping conveyor transfer assembly in accordance with the present invention with the output end in a first position; ~~[and]~~

Amend Page 5, paragraph 26, as follows:

Figure 15 shows a side view schematic of the conveyor transfer of Figure 14 with the output end in the second position; and

Insert on Page 5, after the end of paragraph 26, the following:

Figure 16 shows a sectional side view of an alternative construction.

Amend Pages 7 and 8, paragraph 36 as follows:

Figures 4 through 13 show the sequence of steps in distributing workpiece 18 from input conveyor 12 to first and second output conveyors 14 and 16. Arrow A shows the direction of motion of conveyor belt 42 while arrow B shows the direction of motion of the carriage assembly with respect to support frame 22. For the purposes of describing the transfer process, when conveyor belt 42 is moving such that a workpiece 18 resting on working surface 46 is moved away from input conveyor 12 (i.e. arrow A points to the right in the Figures), the conveyor belt will be described as rotating in the clockwise direction. In Figure 4, workpiece 18 is travelling to conveyor transfer assembly 10 on input conveyor 12. Conveyor belt ~~[14]~~ 42 is rotating such that its working surface is travelling at the approximately the same speed as the working surface of input conveyor 12. If conveyer belt ~~[14]~~ 42 was operating at a slower rate, workpiece 18 would continue to be pushed from the rear by input conveyor 12 at the faster rate, potentially causing damage to workpiece 18. In Figure 5, workpiece 18 has been transferred to conveyor belt 42. Conveyor belt 42 is still

moving at the same speed as earlier. In addition, carriage assembly 20 begins moving from a first position proximate to input conveyor 12 towards a second position distal from input conveyor 12. In Figure 6, carriage assembly 20 has moved to the second position and conveyor belt 42 has stopped rotating such that workpiece 18 is resting on conveyor belt 42 directly over second output conveyor 16. Figure 7 shows carriage assembly 20 moving back towards input conveyor 12. At the same time, conveyor belt 42 again moves in a clockwise direction such that workpiece 18 is removed from conveyor 42 and is deposited on second output conveyor 16. The rate of movement of conveyor 42 is such that the rate of speed of the working surface of conveyor 42 is approximately the same as the rate of speed of the motion of carriage assembly 20. These rates of speeds, being approximately equal but in opposite directions, result in motion of the workpiece in the lateral direction. In this embodiment, workpiece 18 is a relatively flat and large workpiece such that the transfer from the higher elevation of the working surface of conveyor belt 42 to the lower vertical position of second output conveyor 16 does not cause workpiece 18 to flip or otherwise turn during the transfer. Figure 8 shows workpiece 18 fully resting on second output conveyor 16 and second output conveyor 16 being activated such that it rotates to carry the workpiece 18 away from conveyor transfer assembly 10. Carriage assembly 20 has returned to the first position such as that shown in Figure 4 and is awaiting the next workpiece18.

Amend Page 9, paragraph 37, as follows:

It would be readily understood by those skilled in the art that there are a wide variety of methods and conveyor controller assemblies for powering rollers ~~[34]~~ 44 to cause the movement of conveyor belt 42 around those rollers. For example a first conveyance actuator such as a motor 43 could be affixed to one of rollers 44 to enable the rotation. When a roller ~~[42]~~ 44 is operated in a clockwise direction, conveyor belt 42 is moved in a clockwise direction. Due to the frictional adhesion between the inter surface of conveyor belt 42 and the outer surface of the cylinder roller, conveyor belt 42 will rotate around rollers 44 and any workpieces resting on working surface 46 will be carried in the direction of the rotation. Likewise, when a roller ~~[42]~~ 44 is operated in a counter-clockwise direction, conveyor belt

42 is moved in a counter-clockwise direction by a second conveyance actuator such as the same motor 43 being operated in reverse.

Amend Page 9, paragraph 38, as follows:

It will also be appreciated by those skilled in the art that the movement of carriage assembly 20 from the first position to the second position within support frame 22 may be accomplished by a wide variety of methods. Generally, a linear actuator ~~[(not shown)]~~ will ~~[operated]~~ operate to move carriage assembly 20. The linear actuator may be a timing belt, a pneumatically powered mechanism or any other linear actuator known to those skilled in the art. In this example, a pneumatically powered piston 45 is shown attached to support frame 22 and carriage assembly 20.

Amend Page 9, paragraph 39, as follows:

In addition, instead of conveyor belts, any of the conveyors described herein may be substituted by a series of parallel cylindrical rollers or wheels or other methods of conveyance known in the art as shown in Figure 16, wherein a series of rollers 44 is shown wherein every second roller 44 is powered by a motor 43.

Amend Page 11, paragraph 45, as follows:

Midlevel moving roller 112 and upper moving roller 106 are affixed to one another and are laterally moveable from a first position as shown in Figure 14 to a second position as shown in Figure 15. This serves to lengthen the working surface of conveyor belt 102. Conveyor belt 102 remains at a constant length provided that roller 112 does not move beyond (i.e. to the right of, as shown in Figure 15) roller 110. Conveyor assembly 100 also includes a conveyor stop member (such as a clamp 103, or a sliding bar passing through a corresponding hole in the conveyor belt, or other such apparatus known in the art) which acts to keep conveyor belt 102 stationary with respect to upper stationary roller 104, even while moving rollers 106 and 112 are in motion.

Drawings

In the Drawings, please substitute the enclosed copies of Figures 2, 3, 14, and 15, all of which have been amended, for the corresponding figures of record.

Also, kindly add new Figure 16 to the set of drawings.

For reference, a "marked-up" copy of the amended figures, with the amendments highlighted in red, is also enclosed.